

**R. CRAIG EVERROAD, PhD**

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**Current Positions:**

2012-      **NASA Postdoctoral Program Fellow**, NASA Ames Research Center.

2012-      **Guest Scientist**, RIKEN, Wako, Japan.

**Education:**

2007      University of Oregon, Biology, PhD.

Dissertation: *Diversification of marine picocyanobacteria: The ecology and evolution of spectral phenotype and phycoerythrin*. Advisor: Dr. Michelle Wood

1996      University of Oregon, Biology and Political Science, BS.

**Research and Professional Experience:**

2009-2012      **Foreign Postdoctoral Researcher**: RIKEN ASI and Guest Researcher, Yokohama City University, Yokohama, Japan.

2008-2009      **Special Assistant Professor**: ImpGrad program (MEXT), Tokyo Metropolitan University, Tokyo, Japan (*adjunct faculty teaching position*).

2007-2008      **Invited Guest Lecturer**: ImpGrad program (MEXT), Tokyo Metropolitan University, Tokyo, Japan.

2000-2008      **Volunteer Technician**: University of Oregon Culture Collection for Microorganisms from Extreme Environments (CCMEE), University of Oregon.

2007      **Postdoctoral Research Fellow** with Dr. Michelle Wood, Department of Biology, University of Oregon.

2000-2007      **Graduate Teaching Fellow**: Department of Biology, University of Oregon.

**Teaching Experience:**

2008-2009      **Instructor**: *Critically Reading Scientific English*, Department of Biological Sciences, Tokyo Metropolitan University (*graduate course for Japanese students*).

2006      **Instructor**: *Harmful Algal Blooms*, Oregon Institute of Marine Biology, University of Oregon (*upper division undergraduate course*).

2006      **Guest lecturer**: *Algae and Photosynthetic Bacteria* with Dr. Lynda Shapiro, Oregon Institute of Marine Biology, University of Oregon.

2004      **Guest lecturer**: *Marine Biology* with Dr. Michelle Wood, University of Oregon.

2004      **Teaching assistant**: *Marine Biology* and *Microbial Evolution* with Dr. Michelle Wood, University of Oregon (*2 courses*).

2003      **Guest lecturer**: *Marine Biology* with Dr. Michelle Wood, University of Oregon.

2001-2002      **Teaching assistant**: *Marine Biology* with Dr. Michelle Wood, *General Biology: Organisms* with Dr. Mark Carrier, and *Microbiology* with Dr. Richard Castenholz, University of Oregon (*3 courses*).

**Grants and Fellowships:**

Pending      2013 NASA Spaceflight Research Opportunities in Space Biology - Experimental evolution of *Bacillus subtilis* populations in space; mutation, selection and population dynamics (PI), \$600,000; 3 years.

2012-2015      NASA Postdoctoral Program. Oak Ridge Associated Universities. Development of artificial microbial mat systems for biological hydrogen production, \$146,000.

- 2011 RIKEN President's Discretionary Fund- Forum Support Program for Young Staff. Next Generation Tools for Molecular Target Discovery (Co-I), 2 million yen, approximately \$23,000 at 2011 exchange rates.
- 2009-2012 RIKEN Foreign Postdoctoral Researcher Fellowship, RIKEN Advanced Science Institute. Integrated multi-omic investigation of phytoplankton community dynamics: novel metabolic function and community structure in an artificial ecosystem, 20.5 million yen, approximately \$240,000 at 2011 exchange rates.
- 2005 National Science Foundation IGERT Research Support Fellowship: Program in Evolution, Development and Genomics, University of Oregon, \$16,000.

**Publications** (asterisk indicates student co-author):

- García-Maldonado JQ\*, Bebout BM, Everroad RC and López-Cortés A. Evidence of hydrogenotrophic methanogenic archaea from hypersaline microbial mats. *In Review*. Microbial Ecology.
- Lee JZ, Burow LC, Woebken D, Everroad RC, Kubo MD, Spormann AM, Weber PK, Pett-Ridge J, Bebout BM and Hoehler TM. Fermentation couples *Chloroflexi* and sulfate-reducing bacteria to *Cyanobacteria* in hypersaline microbial mats. 2014, *Frontiers in Microbiology*.
- Everroad RC, Woebken D, Singer SW, Burow LC, Kyrpides N, Woyke T, Goodwin L, Detweiler A, Prufert-Bebout L and Pett-Ridge J. 2013. Draft genome sequence of an oscillatorian cyanobacterium, strain ESFC-1. *Genome Announcements*. (4):e00527-13.
- Everroad RC, Otaki H\*, Matsuura K and Haruta S. 2012. Diversification of bacterial community composition along a temperature gradient at a thermal spring. *Microbes and Environments*. 27:374-81.
- Otaki H\*, Everroad RC, Matsuura K and Haruta S. 2012. Production and consumption of hydrogen in hot spring microbial mats dominated by a filamentous anoxygenic photosynthetic bacterium. *Microbes and Environments*. 27:293-299 (2013 JSME Best Paper Award).
- Everroad RC and Wood AM. 2012. Phycoerythrin evolution and diversification of spectral phenotype in marine *Synechococcus* and related picocyanobacteria. *Molecular Phylogenetics and Evolution*. 64:381-392 (*ScienceDirect TOP25 article for MPE, September to December 2012*).
- Everroad RC, Yoshida S\*, Tsuboi Y, Kikuchi J and Moriya S. 2012. Concentration of metabolites from low-density planktonic communities for environmental metabolomics using nuclear magnetic resonance spectroscopy. *Journal of Visualized Experiments*. 62:e3163.
- Ogata Y, Chikayama E, Morioka Y\*, Everroad RC, Shino A, Matsushima A, Haruna H, Moriya S, Toyoda T and Kikuchi J. 2012. ECOMICS: A web-based toolkit for investigating the biomolecular web in ecosystems using a trans-omics approach. *PLoS ONE*. 7:e30263.
- Vergara F, Everroad RC, Andraca G\*, Makihara H and Kikuchi J. 2012. Plant host differences between *Cossus redtenbacheri* and *Cossus insularis*: insights from mechanical tests and molecular phylogeny. *Bulletin of Insectology*. 65:217-222.
- Tweddle JF, Strutton PG, Foley DG, O'Higgins L, Wood AM, Scott B\*, Everroad RC, Peterson W, Cannon D, Hunter M and Forster Z. 2010. Relationships among upwelling, phytoplankton blooms, and phycotoxins in coastal Oregon shellfish. *Marine Ecology Progress Series*. 405:131-145.
- Banerjee M, Everroad RC and Castenholz RW. 2009. An unusual cyanobacterium from saline thermal waters with relatives from unexpected habitats. *Extremophiles*. 13:707-713.
- Everroad RC and Wood AM. 2006. Comparative molecular evolution of newly discovered picocyanobacterial strains reveals a phylogenetically informative variable region of  $\beta$ -phycoerythrin. *Journal of Phycology*. 42:1300-1311.
- Everroad C, Six C\*, Partensky F, Thomas JC, Holtendorff J and Wood AM. 2006. Biochemical bases of type IV chromatic adaptation in marine *Synechococcus* spp. *Journal of Bacteriology*. 188:3345-3356.
- Wood AM, Everroad RC and Wingard LM. 2005. Measuring growth rates in microalgal cultures. In Anderson, R. [Ed.] *Algal Culturing Techniques*. Phycological Society of America.

**Manuscripts in Preparation** (asterisk denotes student co-author):

Sudek S, Everroad RC, Gehman A, Worden AZ. Exploring diversity of picophytoplankton along a physico-chemical gradient in the Northeastern Pacific using bioinformatics approaches.

Everroad RC, Tsuboi Y, Kikuchi J and Moriya S. Algal bloom dynamics and metabolic oscillation in an artificial ecosystem.

**Awards:**

2013 JSME Prize for the best publication, Japanese Society for Microbial Ecology. *This award is presented annually to one paper published in the previous year in the society journal Microbes and Environments.*

**Plenary and Invited Presentations:**

2012 Taking Spaceship Earth with us: Building a model microbial ecosystem to facilitate human exploration of the solar system. Departmental Seminar, Tokyo Metropolitan University, Tokyo, Japan.

2010 Development of environmental metabolomics for planktonic microbial communities. Invited poster given at the 6<sup>th</sup> President's Fund Water Workshop, Tsukuba, Japan.

2010 Towards systems ecology: a multi- meta-omics approach to algal community function and dynamics. Invited talk given at the 17<sup>th</sup> President's Fund Water Symposium, Izu, Japan.

2006 Graduate work as an ecologist at the University of Oregon (USA). Invited talk given at the LINX seminar series, Tokyo Metropolitan University, Tokyo, Japan.

2005 Comparative molecular evolution of newly discovered picocyanobacterial strains reveals a phylogenetically informative variable region of  $\beta$ -phycoerythrin. Plenary talk in the Molecular Diversity of the Oceans session at the meeting of The Oceanography Society, Paris, France.

**Student Mentorship:**

2003- 13 Undergraduate students, 14 Graduate students (*research mentor*).

2013 Japanese Society of Microbial Ecology Annual Meeting, Kagoshima, Japan. Young Researcher Workshop. '*Submitting a paper, A to Z*', Guest Lecture: *Dealing with Emotion and English in the Scientific Review Process*.

2008-2009 Tokyo Metropolitan University, BS, MS and PhD Theses in Biology (*faculty advisor for English language support for thesis preparation and defense for about one dozen students in the biology department*).

2008-2009 Uncultured Microbes- A Panel-led Mini Lecture on the Promises of Uncultured Microorganisms, a student-organized mini-symposium held at ISME 12 in Cairns, Australia, Tokyo Metropolitan University (*faculty co-advisor*).

**Education Outreach:**

2007- Scientific English editor/mentor for >50 non-native English speaking students, postdocs and faculty in preparation of abstracts, theses, posters, and talks (primarily Japanese students and faculty at RIKEN and Tokyo Metropolitan University).

2013 NASA, Moffett Field, CA. Lecturer: *Molecular Phylogenetics* (two-part lecture for lab-mates and colleagues introducing phylogenetics including history, philosophy, methodology and presentation).

2013 Watsonville Wetlands Watch, Watsonville, CA. Guest field-lecture on sulfur bacteria in marine intertidal systems to Wetland Stewards (high-school student interns, Teacher: Adrienne Frisbee). *Featured in the July 2013 Watsonville Wetlands Watch e-newsletter*.

2011 RIKEN, Yokohama, Japan. Lecturer: *Molecular Phylogenetics* (three-part lecture for informal seminar series I organized for graduate and postgraduate scientists).

- 2009-2010 RIKEN, Yokohama, Japan. Open campus: Presented my research and general information about cyanobacteria and planktonic algae to the general public at the annual open campus event at RIKEN.
- 2009 International Biology Olympiad, Tsukuba, Japan. Scientific and English advisor for the organizing committee (Vice Chair: Katsumi Matsuura).
- 2008-2012 South Eugene High School, Eugene, OR. *Cyanobacteria are better than you*. Humorous fake research paper I wrote introducing cyanobacteria, endosymbiotic theory, and global biogeochemical cycles (carbon- and nitrogen-fixation) to high school biology students (Teacher: Julie Stewart).

#### **Selected Professional Activities and Service:**

- 2013 Oral presentation: *Microbial mat living library: development of a fully defined microbial mat community for microbiological research*. Japanese Society of Microbial Ecology Annual Meeting, Kagoshima, Japan.
- 2013 Poster presentation: *Diversity of picophytoplankton along a physiochemical gradient in the Northeastern Pacific*. Joint Genome Institute User Meeting (co-author).
- 2013 Poster presentation: *Metagenomic and metatranscriptomic sequencing of a hypersaline mat diel*. Joint Genome Institute User Meeting (co-author).
- 2011 Poster presentation: *Amazon and Arakawa Rivers: A Physicochemical, Metabolic and Microbial Profile Comparison*. The Society for Biotechnology, Japan (co-author).
- 2011 Organizer, *Next Generation Tools for Molecular Target Discovery* Symposium, Wako, Japan.
- 2011 Oral presentation: *Evolution of phenotypic diversity in picocyanobacteria from the Gulf of Mexico*, Phycological Society of America, Seattle, WA, USA. *Journal of Phycology* 47(s2):S32.
- 2009 Oral presentation: *Diversification of bacterial community composition along a temperature gradient at a thermal spring*, Japanese Society of Microbial Ecology Annual Meeting, Hiroshima, Japan.
- 2004 Grants and Fellowships Committee, Phycological Society of America
- Reviewer for: Journal of Phycology, Molecular Phylogenetics and Evolution, Microbes and Environments, JGR-Oceans, FEMS Microbiology Ecology

#### **Professional Affiliations:**

Phycological Society of America      American Society for Microbiology  
 Japanese Society of Microbial Ecology      International Society for Microbial Ecology